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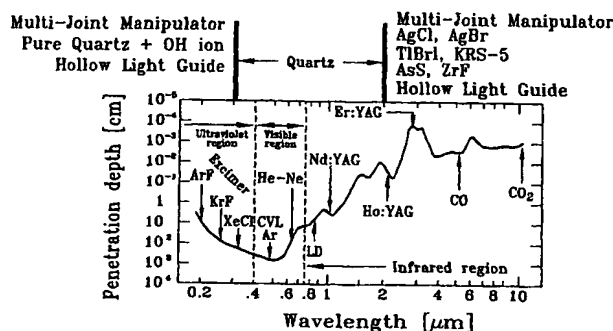
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(54) Title: DEVICE AND METHOD FOR DELIVERY OF LONG WAVELENGTH LASER ENERGY TO A TISSUE SITE



(57) **Abstract:** A laser energy delivery device is provided that is suitable for irradiating a body tissue with relatively long wavelength laser energy in the presence of an aqueous liquid without significant absorption of the laser energy by the liquid. The device includes an elongate hollow sheath that has an open aperture at its distal end portion and closed at its proximal end, a laser energy conduit such as an optical fiber or hollow wave guide, within the sheath, the distal end of the conduit being disposed near the open aperture at the distal end portion of the sheath, and the proximal end of the conduit being adapted for connection to a source of long wavelength laser energy. The sheath also includes an inlet port, spaced from the proximal end of the sheath, and adapted to receive and deliver a biologically compatible gas through the sheath to a body tissue site in contact with the open distal end of the sheath. In use, the open aperture at the distal end portion of the sheath is positioned in contact with a body tissue site. Gas, such as carbon dioxide, infused through the sheath displaces an aqueous liquid from the region between the distal end portion of the sheath and the tissue. Laser energy emitted from the distal end portion of the conduit passes through the substantially liquid-free region at the distal end of the sheath and impinges on the tissue to be irradiated. The laser energy can be used to ablate, vaporize, coagulate or shrink tissue at the target zone without interference from aqueous liquids, which tend to absorb relatively large amounts of long wavelength laser energy and reduce the efficiency of tissue ablation.

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